

# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum) MSH-268PCT

**Box No. I TITLE OF INVENTION**

HYPERBRANCHED (PAMAM) POLYMERS VIA A ONE POT PROCESS

**Box No. II APPLICANT**

☐ This person is also inventor

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

DENDRITIC NANOTECHNOLOGIES, INC.  
2625 Denison Suite B  
Mt. Pleasant, Michigan 48858  
United States of America

Telephone No.

989-631-4551

Facsimile No.

989-631-4584

Teleprinter No.

Applicant's registration No. with the Office

State (that is, country) of nationality:

United States of America

State (that is, country) of residence:

United States of America

This person is applicant  
for the purposes of:

☐ all designated  
States

☒ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

**Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

TOMALIA, DONALD A.  
463 West Chippewa River Road  
Midland, Michigan 48640  
United States of America

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box is  
marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

United States of America

State (that is, country) of residence:

United States of America

This person is applicant  
for the purposes of:

☐ all designated  
States

☐ all designated States except  
the United States of America

☒ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

**Box No. IV AGENT OR COMMON REPRESENTATIVE: OR ADDRESS FOR CORRESPONDENCE**

The person identified below is hereby has been appointed to act on behalf  
of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common  
representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

McKELLAR, ROBERT L.  
McKellar Stevens, PLLC  
784 South Poseyville Road  
Midland, Michigan 48640  
United States of America

Telephone No.

989-631-4551

Facsimile No.

989-631-4584

Teleprinter No.

Agent's registration No. with the Office

26,002

☐ Address for correspondence: Mark this check-box where no agent or common representative is has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SWANSON, DOUGLAS R.  
2915 Billbrael  
Mt. Pleasant, Michigan 48858  
United States of America

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:  
United States of AmericaState (that is, country) of residence:  
United States of America

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☐ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☐ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☐ the United States of America only☐ the States indicated in the Supplemental Box

Further applicants and/or (further) inventors are indicated on another continuation sheet.

## Box No. V DESIGNATIONS

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is **not designated** for any kind of national protection
- ☐ KR Republic of Korea is **not designated** for any kind of national protection
- ☐ RU Russian Federation is **not designated** for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

## Box No. VI PRIORITY CLAIM

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day month year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) September 12, 2003 (12.09.03)	60/502,800	US <sup>1</sup>		
item (2)				
item (3)				

☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

☐ all items    ☒ item (1)    ☐ item (2)    ☐ item (3)    ☐ other, see Supplemental Box

\* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)): . . . .

## Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / US

Request to use results of earlier search: reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day month year)                      Number                      Country (or regional Office)

## Box No. VIII DECLARATIONS

The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

		Number of declarations
<input checked="" type="checkbox"/> Box No. VIII (i)	Declaration as to the identity of the inventor	1
<input checked="" type="checkbox"/> Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	1
<input checked="" type="checkbox"/> Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	1
<input checked="" type="checkbox"/> Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	1
<input type="checkbox"/> Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	

**Box No. V DESIGNATIONS**

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ KR Republic of Korea is not designated for any kind of national protection
- ☐ RU Russian Federation is not designated for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

**Box No. VI PRIORITY CLAIM**

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day month year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application: * regional Office	international application: receiving Office
item (1) September 12, 2003 (12.09.03)	60/502,800			
item (2)				
item (3)				

☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

☐ all items ☒ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box

\* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)): . . .

**Box No. VII INTERNATIONAL SEARCHING AUTHORITY**

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / US

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day month year)

Number

Country (or regional Office)

**Box No. VIII DECLARATIONS**

The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

		Number of declarations
<input checked="" type="checkbox"/> Box No. VIII (i)	Declaration as to the identity of the inventor	1
<input checked="" type="checkbox"/> Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	1
<input checked="" type="checkbox"/> Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	1
<input checked="" type="checkbox"/> Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	1
<input type="checkbox"/> Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	

**Box No. VIII (i) DECLARATION: IDENTITY OF THE INVENTOR**

*The declaration must conform to the standardized wording provided for in Section 211; see Notes to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (i). If this Box is not used, this sheet should not be included in the request.*

Declaration as to the identity of the inventor (Rules 4.17(i) and 51bis.1(a)(i)):

In relation to this international application,

TOMALIA, DONALD A.  
463 West Chippewa River Road  
Midland, Michigan 48640  
United States of America

and

SWANSON, DOUGLAS R.  
2915 Billbrael  
Mt. Pleasant, Michigan 48858  
United States of America

are the inventors of the subject matter for which protection is sought by way of this international application.

This declaration is made for the purposes of all designations.

**Box No. VIII (ii) DECLARATION: ENTITLEMENT TO APPLY FOR AND BE GRANTED A PATENT**

*The declaration must conform to the standardized wording provided for in Section 212: see Notes to Boxes Nos. I III, I III (i) to (v) (in general) and the specific Notes to Box No. I III (ii). If this Box is not used, this sheet should not be included in the request.*

Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate:

In relation to this international application,

DENDRITIC NANOTECHNOLOGIES, INC. is entitled to apply for and be granted a patent by virtue of the following:

an assignment from

TOMALIA, DONALD A., 463 West Chippewa River Road, Midland, Michigan, US, dated 10 September 2004;

and

SWANSON, DOUGLAS R., 2915 Billbrael, Mt. Pleasant, Michigan, US, dated 10 September 2004

to DENDRITIC NANOTECHNOLOGIES, INC.

This declaration is made for the purposes of all designations.

**Box No. VIII (iii) DECLARATION: ENTITLEMENT TO CLAIM PRIORITY**

*The declaration must conform to the standardized wording provided for in Section 213; see Notes to Boxes Nos. VII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iii). If this Box is not used, this sheet should not be included in the request.*

Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)):

In relation to this international application,

DENDRITIC NANOTECHNOLOGIES, INC. is entitled to claim priority of earlier application No. 60/502,800 by virtue of the following:

an assignment from

TOMALIA, DONALD A., 463 West Chippewa River Road, Midland, Michigan, US, dated 10 September 2004;

and

SWANSON, DOUGLAS R., 2915 Billbrael, Mt. Pleasant, Michigan, US, dated 10 September 2004

to DENDRITIC NANOTECHNOLOGIES, INC.

This declaration is made for the purposes of all designations.

**Box No. VIII (iv) DECLARATION OF INVENTORSHIP** (only for the purposes of the designation of the United States of America)  
The declaration must conform to the following standardized wording provided for in Section 214; see also Boxes Nos. VIII, VIII (i) to (iv) (in general) and the specific Notes to Box No. VIII (iv). If this Box is not used, this sheet should not be included in the request.

**Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv))  
for the purposes of the designation of the United States of America:**

I hereby declare that I believe I am the original, first and sole (if only one inventor is listed below) or joint (if more than one inventor is listed below) inventor of the subject matter which is claimed and for which a patent is sought.

This declaration is directed to the international application of which it forms a part (if filing declaration with application).

This declaration is directed to international application No. PCT/..... (if furnishing declaration pursuant to Rule 26ter).

I hereby declare that my residence, mailing address, and citizenship are as stated next to my name.

I hereby state that I have reviewed and understand the contents of the above-identified international application, including the claims of said application. I have identified in the request of said application, in compliance with PCT Rule 4.10, any claim to foreign priority, and I have identified below, under the heading "Prior Applications," by application number, country or Member of the World Trade Organization, day, month and year of filing, any application for a patent or inventor's certificate filed in a country other than the United States of America, including any PCT international application designating at least one country other than the United States of America, having a filing date before that of the application on which foreign priority is claimed.

Prior Applications: .....

I hereby acknowledge the duty to disclose information that is known by me to be material to patentability as defined by 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the PCT international filing date of the continuation-in-part application.

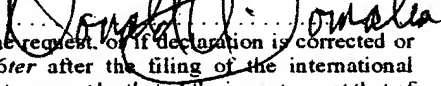
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: Donald A. Tomalia .....

Residence: Midland, Michigan, US  
(city and either US state, if applicable, or country) .....

Mailing Address: 463 West Chippewa River Road  
Midland, Michigan 48640  
United States of America .....

Citizenship: US .....

Inventor's Signature:  .....

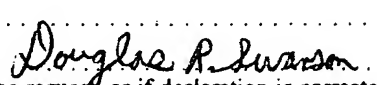
Date: Sept 7, 2004  
(of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

Name: Douglas R. Swanson .....

Residence: Mt. Pleasant, Michigan, US  
(city and either US state, if applicable, or country) .....

Mailing Address: 2915 Billbrael  
Mt. Pleasant, Michigan 48858  
United States of America .....

Citizenship: US .....

Inventor's Signature:  .....

Date: Sept 7, 2004  
(of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

☐ This declaration is continued on the following sheet, "Continuation of Box No. VIII (iv)".

Box No. IX CHECK LIST; LANGUAGE OF FILING

This international application contains:

(a) in paper form, the following number of sheets:

request (including declaration sheets) : 8  
description (excluding sequence listing and/or tables related thereto) : 6  
claims : 3  
abstract : 1  
drawings : 5

Sub-total number of sheets : 23

sequence listing :  
tables related thereto :  
(for both, actual number of sheets if filed in paper form, whether or not also filed in computer readable form: see (c) below)

Total number of sheets : 23

(b) ☒ only in computer readable form (Section 801(a)(i))

- (i) ☐ sequence listing  
(ii) ☐ tables related thereto

(c) ☐ also in computer readable form (Section 801(a)(ii))

- (i) ☐ sequence listing  
(ii) ☐ tables related thereto

Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the

- ☐ sequence listing:  
☐ tables related thereto:

(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)

This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet  | 1 |
| 2. <input type="checkbox"/> original separate power of attorney   |   |
| 3. <input checked="" type="checkbox"/> original general power of attorney   | 1 |
| 4. <input type="checkbox"/> copy of general power of attorney: reference number, if any: .....  |   |
| 5. <input type="checkbox"/> statement explaining lack of signature  |   |
| 6. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): .....   |   |
| 7. <input type="checkbox"/> translation of international application into (language): .....   |   |
| 8. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material  |   |
| 9. <input type="checkbox"/> sequence listing in computer readable form (indicate type and number of carriers)   |   |
| (i) <input type="checkbox"/> copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application)   |   |
| (ii) <input type="checkbox"/> (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter              |   |
| (iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the sequence listing mentioned in left column   |   |
| 10. <input type="checkbox"/> tables in computer readable form related to sequence listing (indicate type and number of carriers)  |   |
| (i) <input type="checkbox"/> copy submitted for the purposes of international search under Section 802(b-quater) only (and not as part of the international application)  |   |
| (ii) <input type="checkbox"/> (only where check-box (b)(ii) or (c)(ii) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Section 802(b-quater) |   |
| (iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the tables mentioned in left column   |   |
| 11. <input type="checkbox"/> other (specify): ADS, Ret, Rec, Postcard, Exp, Mail, Cert. ....  | 4 |

Figure of the drawings which should accompany the abstract: 5

Language of filing of the international application: ENGLISH

Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

Robert L. McKellar Sept 10, 2004

Robert L. McKellar  
Agent for Applicant

Date

For receiving Office use only

1. Date of actual receipt of the purported international application:

3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:

4. Date of timely receipt of the required corrections under PCT Article 11(2):

5. International Searching Authority (if two or more are competent): ISA /

6. ☐ Transmittal of search copy delayed until search fee is paid

2. Drawings:

☐ received:

☐ not received:

For International Bureau use only

Date of receipt of the record copy by the International Bureau:

This sheet is not part of and does not count as a sheet of the international application.

**PCT**

**FEE CALCULATION SHEET**

**Annex to the Request**

For receiving Office use only

International Application No.

Date stamp of the receiving Office

Applicant's or agent's  
file reference

MSH-268PCT

Applicant

Dendritic Nanotechnologies, Inc.

**CALCULATION OF PRESCRIBED FEES**

**1. TRANSMITTAL FEE**

300.00 **T**

**2. SEARCH FEE**

1000.00 **S**

International search to be carried out by

US

(If two or more International Searching Authorities are competent to carry out the international search, indicate the name of the Authority which is chosen to carry out the international search.)

**3. INTERNATIONAL FILING FEE**

Where items (b) and/or (c) of Box No. IX apply, enter Sub-total number of sheets } 23  
Where items (b) and (c) of Box No. IX do not apply, enter Total number of sheets }

**i1** first 30 sheets 1134.00 **i1**

**i2** number of sheets in excess of 30 x fee per sheet = **i2**

**i3** additional component (only if sequence listing and/or tables related thereto are filed in computer readable form under Section 801(a)(i), or both in that form and on paper, under Section 801(a)(ii)):

400 x fee per sheet = **i3**

Add amounts entered at i1, i2 and i3 and enter total at **I**

1134.00 **I**

(Applicants from certain States are entitled to a reduction of 75% of the international filing fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at **I** is 25% of the international filing fee.)

**4. FEE FOR PRIORITY DOCUMENT (if applicable)**

20.00 **P**

**5. TOTAL FEES PAYABLE**

2454.00

**TOTAL**

Add amounts entered at T, S, I and P, and enter total in the TOTAL box

**MODE OF PAYMENT**

☒ authorization to charge  
deposit account (see below)

☐ postal money order

☐ cash

☐ coupons

☐ cheque

☐ bank draft

☐ revenue stamps

☐ other (specify):

**AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT**

(This mode of payment may not be available at all receiving Offices)

☒ Authorization to charge the total fees indicated above.

☒ (This check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.

Receiving Office: RO/ US

Deposit Account No.: 13-2492

Date: September 10, 2004

Name: Robert L. McKellar

*Robert L. McKellar*

**GENERAL POWER OF ATTORNEY**  
(PCT Rule 90.5)

The undersigned person:

DENDRITIC NANOTECHNOLOGIES, INC.  
2625 Denison Drive, Suite B  
Mount Pleasant, MI 48858  
USA

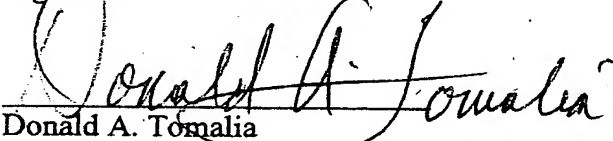
Hereby appoints the following person as: **Agent**

Karen L. Kimble  
Technology Law, PLLC  
3595 North Sunset Way  
Sanford, MI 48657  
USA

To represent the undersigned before: **All the Competent International Authorities**

In connection with any and all international applications filed by the undersigned with the following Offices: **EP, IB, JP and US** as receiving Office and to make or receive payments on behalf of the undersigned. This power of attorney shall remain in effect until revoked in writing by Dendritic Nanotechnologies, Inc.

Signature:



Donald A. Tomalia  
President and Chief Technical Officer  
Dendritic Nanotechnologies, Inc.

Date:

Jan 4, 2005